REMARKS

Claims 20-40 are pending in the present application.

Claims 36-40 are allowed.

Claims 20-31 are rejected.

Claims 32-35 are objected to.

Claims 20-31 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. 4,004,934 to Prochazka. Applicants respectfully traverse this rejection.

The Office Action has not presented a *prima facie* case of obviousness. Prochazka does not teach or suggest all the elements in the present claims. See In re Wilson, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). Claim 20 recites a method of making a low resistivity silicon carbide article comprising reacting silicon carbide precursors in a nitrogen atmosphere to form low resisitivity silicon carbide, and depositing the low resistivity silicon carbide on a substrate. Prochazka does not teach or suggest reacting the precursors of silicon carbide in a nitrogen atmosphere to form low resisitivity silicon carbide. In contrast, Prochazka teaches making a silicon carbide powder followed by sintering the silicon carbide powder in an atmosphere of argon, helium, nitrogen and hydrogen (col. 1, lines 59-67, col. 5, line 57 to col. 6, line 35). Prochazka does not teach or suggest making a low resistivity silicon carbide article as recited in present claim 20 where silicon carbide precursors are reacted in a nitrogen atmosphere.

Prochazka also does not teach or suggest the nitrogen concentrations as recited in claims 21-24 when reacting silicon carbide precursors to form low resistivity silicon carbide. Such nitrogen concentrations in the presence of silicon carbide precursors provide for a silicon carbide having a resistivity of less than 0.1 ohm-cm (claim 25), or such as from about 0.005 ohm-cm to about 0.05 ohm-cm (claim 26). Prochazka does not teach or suggest such a low resistivity. Prochazka discloses sintered silicon carbide with a resistivity of from 10^{-1} ohm-cm to 10^{4} ohm-cm (col. 7, lines 1-5), not less than 0.1 ohm-cm. Examples I, II and III at the end of the patent disclose resistivity values of 70 ohm-cm, 0.2 ohm-cm and $8x10^{3}$ ohm-cm. All the resistivity values disclosed in Prochazka exceed the claimed ranges of the present invention. Prochazka would not have provided any reason or motivation to make the low resistivity silicon carbide of the presently claimed invention.

Further, Prochazka teaches that the degree of electrical conductivity is determined by the nitrogen pressure during sintering (col. 6, lines 65-68). In contrast, the presently claimed method applies nitrogen during the reaction of silicon carbide precursors, not during the sintering of silicon carbide powder. Moreover, the examples at the end of the patent teach applying nitrogen during the sintering of silicon carbide powder, not during the formation of silicon carbide from its precursors as the presently claimed invention (see Example I, lines 57-59, Example II, lines 18-22, Example IV, lines38-41, lines 64-68, Example VII, lines 5-13, Example VIII, lines 25-30, Example IX, lines 39-43, Example XI, lines 58-62). Prochazka teaches a different method than the presently claimed invention.

The Office Action's allegation at page 3 that the "prior art product" is made by CVD as recited in present claim 27 is in error. Prochazka does not teach or suggest making a low resistivity silicon carbide by CVD. Prochazka only discloses making nitrogen containing silicon carbide by sintering (see title of the patent, Abstract, col. 1, line 59 to col. 2, line 1, col. 3, line 64 to col. 4, line 5, col. 5, line 57 to col. 6, line 14, col. 6, lines 39-40 and lines 59-65, col. 7, lines 22-25, and Examples I-XI). No where does Prochazka provide any reason or motivation to make a low resistivity silicon carbide by CVD as recited in present claim 27.

Applicants respectfully request withdrawal of the rejection of claims 20-31 under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. 4,004,934 to Prochazka.

Favorable consideration and allowance of claims 20-40 are earnestly solicited.

Should the Examiner have any questions concerning this response or this application, or should he believe this application is for any reason not yet in condition for allowance, he is respectfully requested to telephone the undersigned at the number set forth below to expedite allowance of this application.

Respectfully submitted,

John J. Piskorski
Attorney for Applicant
Registration No. 35,647
Telephone No.: (508) 229-7662
Facsimile No.: (508) 787-4730

Rohm and Haas Electronic Materials
455 Forest Street
Marlborough, Massachusetts 01752